

CLAIMS:

1. A display device (100) arranged to operate in two different modes: a transparent mode and a display mode, the display device being characterized in that it comprises
 - a transparent plate (101) provided with a plurality of light emitting means (102), wherein each of said light emitting means is operative to illuminate a pixel area (104) of the display device, the area of each light emitting means being smaller than its corresponding pixel area; and
 - a first switchable diffuser (103) arranged to be transparent when operated in said transparent mode and to diffuse the light emitted from at least part of the light emitting means (102) when operated in said display mode, wherein said at least part of the light emitting means is operative to illuminate the corresponding pixel area in said display mode.
2. The display device according to claim 1, wherein said light emitting means (102) are LEDs.
3. The display device according to claim 1, wherein said light emitting means (102) are made of PLED or OLED material.
4. The display device according to claim 1, wherein the diffuser (503, 509) consists of a polymer dispersed liquid crystal (PDLC) material (305) arranged between two sheets of conducting glass (306), which diffuser operates in the transparent mode when an electric field is applied to the conducting glass and in the display mode when no electric field is applied to the conducting glass.
5. The display device according to claim 1, wherein the diffuser (503, 509) consists of a liquid crystal (LC) gel (305) material arranged between two sheets of conducting glass (306), which diffuser operates in the display mode when an electric field is applied to the conducting glass and in the transparent mode when no electric field is applied to the conducting glass.

6. The display device according to claim 1, further comprising:
an optical element (408) arranged at the respective light emitting means (402),
the optical element having a focal length such that said respective light emitting means
5 evenly illuminates the corresponding pixel area (404).
7. The display device according to claim 1, wherein the light emitting means
(102) are arranged in rows and columns on the transparent plate (101), the display further
comprising:
10 addressing means arranged to address the rows and columns of the light
emitting means.
8. The display device according to claim 1, wherein the light emitting means
(202) provided in the plate (201) are interconnected such that a fixed predetermined image
15 can be shown on the display when the diffuser (203) is operated in the display mode.
9. The display device according to claim 1, further comprising a second
switchable diffuser (509) arranged parallel to the first diffuser (503) and on the opposite side
of the transparent plate (501), which second diffuser is arranged to be transparent when
20 operated in a transparent mode and to diffuse the light emitted from at least part of the light
emitting means (502) when operated in a display mode, wherein said at least part of the light
emitting means is operative to illuminate the corresponding pixel area (504) in the display
mode.